

In the Claims:

Please amend the claims as follows:

1. (currently amended) Method A method for synchronizing a robot that includes a control system, a first robot part and a second robot part movably attached to the first robot part, whereby the position of a target arranged on the first robot part is determined by the passage of a sensor arranged on the second robot part, said method comprising:

causing the target to include moving at least one of said first and second robot parts relative to each other, said first robot part including the target having several distinct detectable changes comprising step-like structural changes height transitions, said step-like structural changes height transitions being defined by sharp level differences in surfaces of said first robot part and comprising walls or sides,

sensing at least two of said distinct detectable changes by the sensor at said respective step-like structural changes height transitions,

calculating the position of the target by determining calculating a center-point from adjacent sensed height transitions of adjacent step-like structural changes, and

introducing the calculated target position into the control system and comparing the target position with a calibration position for the target in the control system.

2. (currently amended) Method The method according to claim 1, wherein calculating the position of the target is effected by reading with the sensor which comprises a non-contact sensor.

Best Available Copy

Best Available Copy

3. (currently amended) ~~Method~~ The method according to claim 1, wherein calculating the position of the target is effected by reading with the sensor which comprises a contact sensor.

4. (currently amended) ~~Method~~ The method according to claim 1, wherein the target comprises a groove with said ~~vertical~~ walls.

5. (currently amended) ~~Method~~ The method according to claim 1, wherein the target comprises an elevation with said ~~vertical~~ sides.

E / 6. (currently amended) ~~Device~~ A device for synchronizing a robot that includes a control system, a first robot part and a second robot part movably attached to the first robot part, the device comprising:

a target arranged on the first robot part; and

a sensor arranged on the second robot part,

wherein the target includes several distinct detectable changes comprising ~~step-like~~ structural changes height transitions, said ~~step-like~~ structural changes height transitions being defined by sharp level differences in surfaces of said first robot part and comprising ~~vertical~~ walls or sides, said sensor sensing at least two of said distinct detectable changes at said respective ~~step-like~~ structural changes height transitions to thereby enable the synchronizing of said robot by calculating a position of the target ~~corresponding to~~ by calculating a center-point of adjacent ~~step-like~~ structural changes height transitions.

7. (currently amended) Device The device according to claim 6, wherein the step-like structural changes height transitions comprise instantaneous level differences in the form of shoulder parts.

8. (currently amended) Device The device according to claim 6, wherein the target comprises a groove with said vertical walls.

9. (currently amended) Device The device according to claim 6, wherein the target comprises an elevation with said vertical sides.

E | 10. (cancelled)

11. (currently amended) Method A method for synchronizing a robot that includes a control system, a first robot part and a second robot part movably attached to the first robot part, whereby the position of a target arranged on the first robot part is determined by the passage of a sensor arranged on the second robot part, said method comprising:

causing the target to include moving at least one of said first and second robot parts relative to each other, said first robot part including the target having height transitions comprising at least one of substantially vertical sides and substantially vertical walls, level differences in respective surfaces of said substantially vertical sides or walls defining distinct detectable structural changes in surfaces of said first robot part,

sensing at least two of said distinct detectable changes by the sensor at said respective structural changes,

calculating the position of the target by determining calculating a center-point from of adjacent sensed structural changes, and

introducing the calculated target position into the control system and comparing the target position with a calibration position for the target in the control system.

12. (currently amended) Method The method according to claim 11, wherein calculating the position of the target is effected by reading with the sensor which comprises a non-contact sensor.

13. (currently amended) Method The method according to claim 11, wherein calculating the position of the target is effected by reading with the sensor which comprises a contact sensor.

14. (currently amended) Method The method according to claim 11, wherein said target comprises a groove with said substantially vertical walls.

15. (currently amended) Method The method according to claim 11, wherein said target comprises an elevation with said substantially vertical sides.

16. (currently amended) Device A device for synchronizing a robot that includes a control system, a first robot part and a second robot part movably attached to the first robot part, the device comprising:

a target arranged on the first robot part; and

a sensor arranged on the second robot part,

wherein the target includes height transitions comprising at least one of substantially vertical sides and substantially vertical walls, level differences in respective surfaces of said substantially vertical sides or walls defining distinct detectable structural changes in surfaces of said first robot part, said sensor sensing at least two of said distinct detectable changes at said respective structural changes to thereby enable the synchronizing of said robot by calculating a position of the target corresponding to by calculating a center-point of adjacent structural changes.

17. (currently amended) Device The device according to claim 16, wherein the structural changes comprise instantaneous level differences in the form of shoulder parts.

18. (currently amended) Device The device according to claim 19, wherein said target comprises a groove with said substantially vertical walls.

19. (currently amended) Device The device according to claim 19, wherein said target comprises an elevation with said substantially vertical sides.

20. (new) A method for synchronizing a robot that includes a control system, a first robot part and a second robot part movably attached to the first robot part, a sensor on one of the first robot part and a target on another of the first robot part and the second robot part, said method comprising:

moving at least one of the first robot part and the second robot part such that the sensor passes the target, the target comprising a plurality of distinct detectable changes comprising walls or sides extending in a direction at a right angle to a direction of motion of the sensor;

sensing at least two of the distinct detectable changes with the sensor;

calculating a target position by calculating a center-point from adjacent sensed distinct detectable changes; and

introducing the calculated target position into the control system and comparing the target position with a calibration position for the target in the control system.

21. (new) A method for synchronizing a robot that includes a control system, a first robot part and a second robot part movably attached to the first robot part, a sensor on one of the first robot part and a target on another of the first robot part and the second robot part, said method comprising:

moving at least one of the first robot part and the second robot part such that the sensor passes the target, the target comprising a plurality of spaced distinct detectable changes comprising walls or sides;

sensing at least two of the distinct detectable changes with the sensor;

calculating a target position by calculating a center-point from adjacent sensed distinct detectable changes; and

introducing the calculated target position into the control system and comparing the target position with a calibration position for the target in the control system.

22. (new) A device for synchronizing a robot that includes a control system, a first robot part and a second robot part movably attached to the first robot part, the device comprising:

a target arranged on one of the first robot part and the second robot part, the target comprising a plurality of distinct detectable changes comprising walls or sides extending in a direction at a right angle to a direction of motion of the sensor; and

a sensor arranged another of the first robot part and the second robot part, the sensor being operative to sense at least two of the distinct detectable changes, thereby enable the synchronizing of said robot by calculating a position of the target by calculating a center-point of adjacent distinct detectable changes.

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- BLACK BORDERS**
- IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- FADED TEXT OR DRAWING**
- BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- SKEWED/SLANTED IMAGES**
- COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- GRAY SCALE DOCUMENTS**
- LINES OR MARKS ON ORIGINAL DOCUMENT**
- REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- OTHER: a line cut across the top**

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.